What is claimed is:

1. An apparatus, comprising:

a bus to facilitate data transfers between clients; and

an arbiter coupled to the bus to grant bus access to one of the clients at a time based on a programmable priority assigned to at least some of the clients and on an age of an ungranted bus request.

2. The apparatus of claim 1, wherein the clients include master clients and target clients, wherein the arbiter is to alternate granting bus access to a requesting one of the master clients and a requesting one of the target clients.

3. The apparatus of claim 2, wherein the arbiter is to grant bus access to a requesting one of the target clients based on round-robin arbitration.

4. The apparatus of claim 2, wherein the arbiter is to grant bus access to a requesting one of the master clients based at least partly on hierarchical arbitration.

5. The apparatus of claim 1, wherein the arbiter comprises a programmable storage structure to store the programmable priority.

6. The apparatus of claim 1, wherein:

the age is indicated by a number of clock cycles since the ungranted bus request; and

the arbiter comprises logic to contain an indicator of the number of clock cycles.

7. The apparatus of claim 1, wherein:
the age is indicated by an elapsed time since the ungranted bus request; and
the arbiter comprises logic to contain an indicator of the elapsed time.

8. The apparatus of claim 1, wherein the bus is to use a split-transaction data transfer protocol.

9. The apparatus of claim 1, wherein the arbiter comprises a centralized arbiter.

10. A method, comprising:
determining which pending bus requests from clients have a highest programmable hierarchical priority and a greatest time interval since requesting access to a bus, based on an algorithm; and
granting access to the bus based on said determining.

11. The method of claim 10, further comprising limiting said determining to retried pending bus requests.

12. The method of claim 11, further comprising granting bus access based on existence of at least one special condition prior to granting bus access based on said determining.

13. The method of claim 10, wherein said determining further comprises determining priority based on order of physical connection among the clients, responsive to multiple clients having the highest programmable hierarchical priority and the greatest time interval since requesting access to the bus based on the algorithm.

14. The method of claim 10, wherein:
said determining is applied to the pending bus requests from master clients; and
bus requests from target clients are handled separately from said determining.

15. The method of claim 14, wherein the bus requests from the target clients are arbitrated using round robin priority.

16. A system, comprising:
a bus to transfer data between clients;
a volatile memory coupled to the bus; and
an arbiter coupled to the bus to arbitrate pending bus requests from a first type of the clients based on a programmable hierarchical ranking of the first type of the clients and on a time interval indicating how long each of the bus requests has been pending.

17. The system of claim 16, wherein the arbiter is to consider the time interval only when multiple ones of the pending bus requests have a same highest programmable hierarchical ranking.

18. The system of claim 17, wherein the arbiter is to give priority to retried bus requests before the pending bus requests based on the hierarchical ranking and the time interval.

19. The system of claim 16, wherein:
the first type of clients are master clients;
a second type of clients are target clients; and
the arbiter is to arbitrate bus requests from the target clients separately from arbitrating the bus requests from the master clients.

20. The system of claim 19, wherein the arbiter is to arbitrate bus requests from the target clients using round-robin priority.